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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/886,881 07/02/97 ECKSTEIN

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EXAMINER

IM52/0420

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TARAZANO, D

ART UNIT

PAPER NUMBER

19

1773

DATE MAILED:

04/20/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/886,881

Applicant(s)

ECKSTEIN ET AL.

Examiner

D. L. Tarazano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 01 February 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7,8,10-16,18,35,37,41-49,51 and 98-106 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1,3,7,8,10-16,18,35,37,41-49,51 and 98-106 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent

Claims 1, 3, 7-8, 10-11, 13-15, 35-37, 41-44, 46-48, 98, 99, and 101 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Hodgson et al. (5,376,439).

Hodgson et al. teach narrow molecular weight polyethylene blends. These blends are used in the surface layers of films comprising high-density polyethylene cores (column 2, lines 45). These structures function as water impermeable structures (column 1, lines 28+) so would have "barrier" properties as claimed.

The narrow molecular weight very low-density ethylene polymer, (single site catalyzed polymer) used as the first component of the films are copolymers of ethylene and C₄-C₂₀ alpha-olefins: recited materials include ethylene/butene, ethylene/hexene, and ethylene/ octene copolymers (column 3, lines 60+). Examples of these materials are made by metallocene catalysis (column 7, lines 14+). The above mentioned first component is blended with a second material such as LDPE; this second component corresponds to the claimed polyolefin material in the applicants blends.

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Claims 1, 2, 3, 7, 8, 10-11, 13, 14, 16, 18, 35, 36, 37, 41-44, 46, 47, 49, and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Hodgson, Jr. (5,206,075).

Hodgson teaches copolymers of ethylene and C_3 - C_{20} comonomers made by metallocene catalysis. These materials are used to produce multilayer films in which the base layer can comprise blend of more than one such polymer and a polypropylene species (column 7, lines 48-64). Specific blends comprising ethylene-butene or ethylene-hexene copolymers are recited. Surface layers comprise metallocene-catalyzed polyethylenes or other materials. One of these surface layers would correspond to the claimed barrier layer, since it would provide some form of barrier protection to the packaged articles.

Regarding claims 16 and 49, since no density range is recited with the term LLDPE (linear low-density polyethylene), the examiner takes the position that the second VLDPE (very low-density polyethylene) recited in Hodgson would meet this limitation. Since VLDPE materials have low densities and are linear, they would be encompassed by the term LLDPE.

Hodgson discloses the use of bis-cyclopentadienyl zirconium catalysts, an example of a single site zirconocene (metallocene) species (column 8, lines 26+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections, set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7, 8, 10-14, 35, 37, 41, 42-47, 98-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evert et al. (5,055,328) in view of Schut "Enter a new Generation of Polyolefins" Nov. 1991 Plastics Technology and Van der Sanden et al. "Exact Linear Polymers of Enhanced Sealing Performance" ANTEC 1992.

Evert et al. teach a multilayer cross linked laminate film comprising a core sandwiched between an inner layer and an outer layer. The heat sealable inner and outer layers comprise a blend of at least 50% EVA and other suitable polymers and copolymers(column 7, line 1+ to column 8, line 62+). This includes polyolefins such as LLDPE and VLDPE; see table A in which examples 6-9 describe heat sealing layers having 10% or 30% VLDPE.

The core barrier layer (column 8, line 29) can comprise nylon, hydrolyzed ethylene/vinyl acetate copolymer, vinylidene chloride/vinyl chloride copolymer, or vinylidene chloride/methyl-acrylate copolymer.

The film structure can comprise additional layers between the barrier layer and the surface layers, these additional layers comprise materials such as EVA (ethylene-vinyl acetate copolymer as claimed), (column 10, and lines 6-17).

However, Evert et al. do not specify the use of VLDPE produced by metallocene catalysis, and they are silent regarding the specific comonomers used with ethylene to produce such materials..

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Van der Sanden et al. and Schut teach that commercially available metallocene catalyzed polyethylene have physical properties far superior to those of analogous polyethylene formed by Ziegler-Natta catalysis.

Schut teaches in a trade journal article that Exxon is producing a new line of linear low density polyolefins made using homogeneous single site metallocene catalysts, wherein these polyolefins have physical characteristics that are far superior to traditional polyolefins produced from Ziegler Natta catalysis. For example: metallocene catalyzed polyolefins have lower heat-seal initiation temperatures, higher strength (Dart impact results), and better clarity. The superior attributes of these metallocene-catalyzed polyolefins are further elaborated in Van der Sanden et al; who further teach that these polyolefins are a choice material in the production of heat sealable films.

It should also be noted that single site (e.g. metallocene) catalyzed ethylene alpha-olefin copolymers (1-butene, 1-hexene, or 1-octene /ethylene copolymers) are commercially available from Dow in the form of "AFFINITY" or from Exxon in the form of "EXACT". Furthermore, 4-methyl-1-pentene is merely another alpha-olefin. It is functionally equivalent to the above listed alpha-olefins, which are commonly used as a comonomer with ethylene.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used ethylene-alpha olefin copolymers made by single site catalysis as discussed above in the production of the films taught by Evert et al. in order to produce films having improved sealing properties.

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Although Evert et al. do not show specific examples of films having adhesive layers, they teach that additional inner layers can be present. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add or omit adhesive layers in order to produce a film having desirable cohesive forces between the layers. Since Evert et al. teach that EVA can be used in the inner layers of their film structure, It would have been obvious to one having ordinary skill in the art at the time the invention was made to made to do so.

Claim 13 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al. (5,376,439).

Hodgson et al. discuss that conventional linear low density polyethylene (LLDPE) is made by copolymerizing ethylene with C₄-C₁₀ alpha-olefins, and cite butene, hexene, methyl-pentene, and octene as examples of useful monomers (column 1, lines 39+).

They also discuss the nature of metallocene catalyzed (linear) low-density polymers (column 2, lines 47+) in which these are copolymers of ethylene and C₃-C₂₀ alpha-olefins including materials such as butene, hexene, and octene. However, they are silent regarding the use of methyl-pentene.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used methyl-pentene in the production of the metallocene catalyzed polyethylene copolymers taught by Hodgson et al, since is an example of a C₆ alpha-olefin and a monomer conventionally used in the production of linear low density polyethylene materials.

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 7, 8, 10-16, 18, 35, 37, 41-49, 51, and 98-106 have been considered but are moot in view of the new ground(s) of rejection necessitated by the applicants' amendments. While the applicants have added the limitation that the materials contain a layer of "barrier" material, this does not differentiate the prior art materials from those taught by the applicants. The plastic layers taught in the prior art would provide some degree of barrier protection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The examiner cites Newsome (4,457,960) as relating to multilayer barrier films containing LLDPE.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

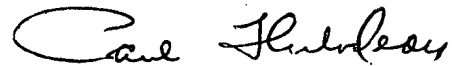
Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. L. Tarazano whose telephone number is (703)-308-2379. The examiner can normally be reached on 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on (703)-309-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9310 for regular communications and (703)-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0661.



D. Lawrence Tarazano
April 19, 2001



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700